DOCUMENT RESUME

ED 185 779 EC 123 966

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TITLE Early Identification: End of Year One Follow-Up. Research Report 79-14.
INSTITUTION London Board of Education (Ontario). Educational Research Services.
PUB DATE 79
NOTE 11p.: See EC 123 964 for Preliminary Report.

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Ability Identification: Academic Failure; *Evaluation Methods; Foreign Countries; *Handicap Identification: *Learning Problems; *Predictive Validity; Primary Education: *Screening Tests; Test Validity
IDENTIFIERS *At Risk (for Handicap); *Ontario (London)

ABSTRACT

The paper reports on a 1 year followup study to establish the short term predictive validity of an early identification system used in London, Ontario (Canada) for kindergarten and first grade high risk students. Ratings of the students by the evaluation teams in January were compared with the students' actual placements as of the following September. Results suggested that the identification system had a satisfactory level of both short term validity and efficiency. A number of limitations of the study indicated a need for further evaluation. (Author/DLS)

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Research Report 79-14

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EARLY IDENTIFICATION: END OF YEAR ONE FOLLOW-UP

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In January 1979 a newly developed early identification system was applied in all kindergarten and grade one classes in the London school system. The identification process relies primarily on the judgments of classroom teachers, supplemented by those of school teams. Learning Resource Teachers take primary responsibility for ensuring that the identification system (Stennett & Isaacs, 1978) is properly administered.

The key elements in the identification process are student nominations made initially by the classroom teacher and reviewed by the school team. The team nominations form a simple scale, as follows:

0 - insufficient contact with the student to make a judgment;

1 - student will be ready, by the end of the school year, for the work of the next school year;

2 - student *may not be ready*, by the end of the school year, for the work of the next school year;

3 - it is *quite certain* that the student *will not be ready*, by the end of the school year, for the work of the next school year.

For purposes of these judgments, 'being ready' means '...adequately master the minimum core objectives of this year's language and mathematics curricula.'

An initial report (Stennett & Isaacs, 1979) reviewed the internal consistency and concurrent validity of the early identification system. Comparisons of the early identification system results with age-grade statistics, with speech and language teacher caseloads and with Learning

Resource Allocation Formula data (Stennett & Isaacs, 1977) all indicated a satisfactory degree of concurrent validity. The internal consistency of the early identification system was established by relating team ratings to student's grade, sex and month of birth. The actual distributions of these ratings were uniformly consistent with those expected. For example, more boys were rated '3' than girls and students born in the latter part of the year were more likely to be rated '3'.

The purpose of this follow-up study was to make a preliminary estimate of the short-term predictive validity of the early identification system, primarily by comparing team ratings made in January 1979 with student placements as of September 1979.

METHOD

Data Collection and Preparation

Principals of all elementary schools were asked to supply a list of all students who had been screened in January 1979 and for whom any special 'placements' were made for the 1979-80 school year. This would include such things as repeating a grade, conditional placement in the next grade, 'low stream' in the next grade, special class placement, etc.

All of the data were coded, keypunched and added to an existing tape file which contained basic identifying information and the results of the January 1979 screening for all 5 413 kindergarten and grade one students.

Data Analyses

The basic analyses consisted simply of tabulating, separately for kindergarten and grade one, the September 1979 placements for students who

were rated during the identification process as 0, 1, 2 or 3.

RESULTS

Table 1 presents, separately for kindergarten and grade 1, the dispostion of students as of September 1979, in terms of the team ratings made in January 1979. (Students rated '0', i.e., those for whom sufficient information was not available for the teams to make a judgment, have not been included in this or subsequent analyses.)

It is quite apparent from these data that, in both kindergarten and grade 1, the less favourable the team rating the greater the likelihood a student will be placed in a low stream, repeat his year or be placed in a special class. Conversely, the more favourable the team rating the greater the likelihood a student will be passed to next grade.

In order to make a completely valid test of the predictive validity of the early identification system it would be necessary to have independent, objective measures of the degree to which each student actually mastered 'the minimum core objectives of the language and mathematics curricula.' Since this information was not available, it was simply assumed that any student who was passed unconditionally to the next grade had exhibited such mastery and that all other children had not. Also, since a definite 'yes - no' prediction of mastery was not made for students who received a team rating of '2', data for them was excluded from the analyses of predictive validity, as were data for students rated '0' by the school teams.

A summary of the data (limited as described above) which describes the relationship of school team ratings or predictions to students' actual 'success' is presented in Table 2. For purposes of this analysis 'success' means passed unconditionally to the next grade and 'fail' means 'all other

possible placements.'

An examination of the figures in Table 2 reveals the following facts:

(1) Overall, the team ratings (for students rated either '1' or '3') were correct 90.93% of the time for kindergarten students and 94.99% of the time for grade 1 students. This represents an improvement of 2.6 and 2.74% respectively over the 'base rate', i.e., the percent of correct predictions if all students were predicted to pass.

(2) The percentage of false positives, i.e., students who were predicted to succeed but actually failed, is considerably higher for kindergarten (8.02%) than for grade 1 (0.73%) students.

(3) The percentage of false negatives, i.e., students who were predicted to fail but actually succeeded, is higher for grade 1 (38.06%) than for kindergarten (26.83%) students.

In assessing these figures, it should be borne in mind that false positives constitute a much more serious problem than false negatives, i.e., predicting a pupil will succeed when he actually fails is a much more serious problem than predicting a pupil will fail when, in fact, he actually succeeds. In the former case a student who needs help will likely not receive it. In the latter case a student will simply get help he doesn't need...and this situation should, in large measure, be self-correcting. That is, as the additional help is provided the student's lack of need for it should soon become apparent.

Viewed in these terms, the false positive rate is the most appropriate measure of the early identification system's predictive *validity*, and the false negative rate the most appropriate measure of its *efficiency*.

These rates, expressed as percentages of the total population of students rated '1' or '3', are presented in the last two rows of Table 2. These figures indicate that while the system is somewhat more *valid* in grade 1 than in kindergarten, it is more *efficient* in kindergarten than in grade 1. In more concrete terms, these data indicate that, of the 4 528 students rated, 181 who should have been identified as needing assistance were missed and, conversely, 135 were perhaps attended to unnecessarily.

Overall, therefore, it appears that the early identification system has an acceptable degree of both short-term predictive validity and is quite efficient. The major area in which some improvement might possibly be made is reducing the false positive rate at the kindergarten level.

DISCUSSION

This study sought to establish the short-term predictive validity of London's Early Identification System. Although the preliminary findings are very encouraging, the reader should recognize that this study was subject to a number of unavoidable limitations. First, the outcome measure used, students' placements as of September 1979, is a very crude substitute for the prediction the school teams were asked to make, viz., students' mastery of the core objectives of the language and mathematics curricula. Second, those persons making the predictions were aware of, and participated to some degree in determining student placements. Third, the work of the school team members, after they have made a prediction of 'probable failure', is directed toward helping students succeed, i.e., invalidating their predictions. Fourth, this was the first time the teachers and school teams had been involved with the early identification system. It is possible

that, with experience, they may become more accurate in their predictions. Finally, the predictions made were for a relatively short time period, varying from about four to five months.

All of these considerations indicate the need for further follow-up of the current 1978-79 cohort of kindergarten and grade one students, as well as successive cohorts which include pre-kindergarten to grade three pupils.

SUMMARY

A preliminary assessment of the short-term predictive validity of London's early identification system was undertaken by comparing team 'nominations' made in January 1979 with student placements as of September 1979. The results suggest that the identification system has a satisfactory level of both short-term predictive validity and efficiency. A number of limitations of the study indicate a need for further evaluation.

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TABLE 1 Disposition of Students as of September, 1979, in Terms of Team Ratings Made in January, 1979.

Disposition	Grade					
	Kindergarten			Grade One		
	Team Ratings....			Team Ratings....		
	1	2	3	1	2	3
% Passed to Next Grade	92.0	44.6	26.8	99.3	76.1	38.1
% Passed to Low Stream, Junior 1, Reading Readiness, etc.	7.7	50.9	49.6	.7	14.9	22.8
% Repeat Grade	.2	3.9	17.9		8.6	35.1
% Placed in Special Class			5.7		.6	4.1
TOTALS	99.9	99.4	100.0	100.0	100.2	100.1

TABLE 2 Relationship of Team Prediction to Student Success, Separately for Kindergarten and Grade 1

Prediction/Outcome*	Grade			
	Kindergarten		Grade 1	
	N	%	N	%
1. Predict Success, success	1904	91.98	2052	99.27
2. Predict Success, fail	166	8.02	15	.73
Totals	2070	100.00	2067	100.00
3. Predict Failure, fail	90	73.17	166	61.94
4. Predict Failure, success	33	26.83	102	38.06
Totals	123	100.00	268	100.00
Overall Correct Predict (1. + 3.)	$\frac{1994}{2193}$	90.93	$\frac{2218}{2335}$	94.99
Base Rate (Predict all Success)	$\frac{1937}{2193}$	88.33	$\frac{2154}{2335}$	92.25
Improvement Over Base Rate		2.60		2.74
Predict Success, but fail (as % of total population)	$\frac{166}{2193}$	7.57	$\frac{15}{2335}$	.64
Predict Failure, but succeed (as % of total population)	$\frac{33}{2193}$	1.50	$\frac{102}{2335}$	4.37

* For purposes of these comparisons, 'success' means being promoted to the next grade and 'failure' means all other placements, e.g., repeating a grade, placed in a low stream, reading readiness class or special class, etc.

Only data for students who were rated either '1' or '3' by the school teams were included in these analyses.